

**VECTOR CONTROLLER FOR A POLYPHASE SYNCHRONOUS RECTIFIER,  
METHOD OF VECTOR-CONTROLLING A POLYPHASE SYNCHRONOUS RECTIFIER  
AND SYNCHRONOUS RECTIFIER INCORPORATING THE SAME**

**ABSTRACT OF THE DISCLOSURE**

A vector controller for a polyphase synchronous rectifier, a method of vector-controlling a polyphase synchronous rectifier, and a synchronous rectifier incorporating the vector controller or the method. In one embodiment, the vector controller includes: (1) an input line voltage detector configured to detect voltages on at least two rectifier input lines and produce therefrom a neutral excursion vector and (2) a neutral excursion compensator, coupled to said input line voltage detector, that applies said neutral excursion vector to a partially compensated drive vector to yield an excursion-compensated drive vector suitable for generation of excursion-compensated pulse-width modulated drive signals for said synchronous rectifier.